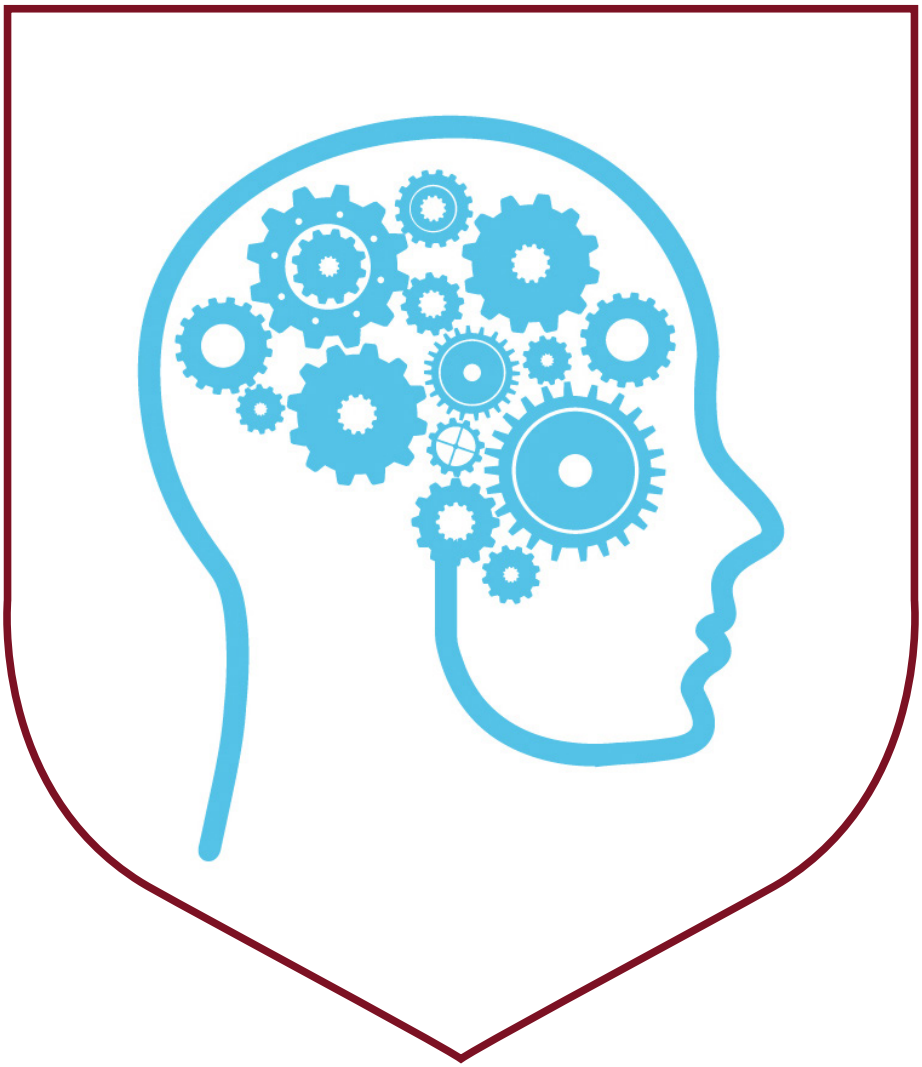
CAMBRIDGE
International Education

Syllabus

Cambridge International AS & A Level Thinking Skills 9694

Use this syllabus for exams in 2028, 2029 and 2030.
Exams are available in the June and November series.



Version 2

For the purposes of screen readers, any mention in this document of Cambridge IGCSE refers to Cambridge International General Certificate of Secondary Education.

Cambridge Pathway

Why choose Cambridge?

We work with schools worldwide to build an education that shapes knowledge, understanding and skills. Together, we give learners the confidence they need to thrive and make a positive impact in a changing world.

As part of the University of Cambridge, we offer a globally trusted and flexible framework for education from age 3 to 19, informed by research, experience, and listening to educators.

With recognised qualifications, high-quality resources, comprehensive support and valuable insights, we help schools prepare every student for the opportunities and challenges ahead.

Qualifications that are recognised and valued worldwide

From the world's top-ranked universities to local higher education institutions, Cambridge qualifications open doors to a world of opportunities.

Setting a global standard

With over 160 years of experience in delivering fair, valid and reliable assessments to students worldwide, we offer a global, recognised performance standard for international education.

Your path, your way

Schools can adapt our curriculum, high-quality teaching and learning resources and flexible assessments to their local context. Our aligned offer helps Cambridge schools support every learner to reach their potential and thrive.

Learning with lasting impact

Cambridge learners build subject knowledge and conceptual understanding, and develop a broad range of skills, learning habits and attributes to help make them ready for the world.

Improving learning outcomes through data-led insight and action

Our trusted baseline and diagnostic assessments, together with our insights and evaluation service, help schools turn data into knowledge and actionable insights, to inform teaching decisions and improve learner outcomes.

Bringing together a community of experts

We bring together the collective knowledge of experts and our diverse community of educators worldwide, supporting them to learn from one another and share ideas and information.

Tackling the climate crisis together

We believe that education is key to tackling the climate crisis. Together with Cambridge schools, we can empower young people with the skills and knowledge to take action on climate change, helping them be ready for the world.

School feedback: 'We think the Cambridge curriculum is superb preparation for university.'

Feedback from: Christoph Guttentag, Dean of Undergraduate Admissions, Duke University, USA

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Contents

Why choose Cambridge? **2**

1 Why choose this syllabus? **4**

2 Syllabus overview **7**

Aims 7

Content overview 8

Assessment overview 9

Assessment objectives 10

3 Subject content **11**

Problem solving 11

Critical thinking 13

4 Details of the assessment **19**

Calculators 19

Language 19

Stimulus material 19

Paper 1 – Problem Solving 19

Paper 2 – Critical Thinking 20

Paper 3 – Problem Analysis and Solution 20

Paper 4 – Applied Reasoning 21

Command words 22

5 What else you need to know **23**

Before you start 23

Making entries 24

Accessibility and equality 25

How students, teachers and higher education can use the grades 27

Changes to this syllabus for 2028, 2029 and 2030 28

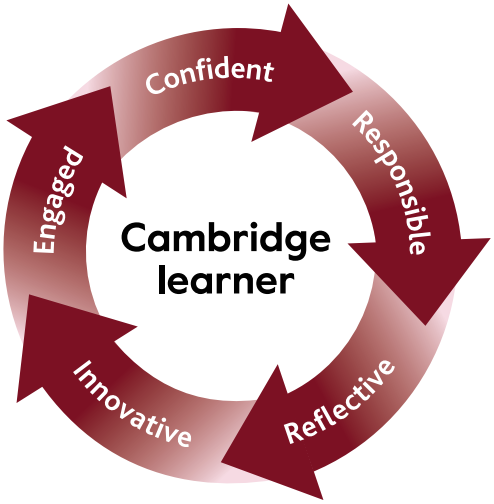
Important: Changes to this syllabus

For information about changes to this syllabus for 2028, 2029 and 2030, go to page 28.

1 Why choose this syllabus?

Key benefits

The best motivation for a student is a real passion for the subject they are learning. Cambridge International AS & A Level give schools flexibility to offer a broad and balanced curriculum with a choice of over 50 subjects. Students can select the subjects they love and that they are best at, enabling them to reach their potential and thrive.



Following a Cambridge International AS & A Level programme helps students develop abilities which universities value highly, including:

- a deep subject knowledge
- conceptual understanding and higher-level thinking skills
- presenting ordered and coherent arguments
- independent learning and research.

Cambridge International AS & A Level Thinking Skills develops a set of transferable skills. These include organising and evaluating information, critical thinking, reasoning and problem solving. Learners can apply these skills across a wide range of subjects and beyond, giving learners capabilities that will support progression to higher education, employment, and in navigating complex real-world issues.

Our approach in Cambridge International AS & A Level Thinking Skills supports the development of learners who are:

confident, by promoting independent learning and research, enabling learners to become self-reliant and confident in their abilities to analyse unfamiliar problems

responsible, as learners are accountable for their own learning and reasoning, and also come to understand the importance of decision-making

reflective, carefully considering various possible perspectives of an argument, alongside the awareness of their personal beliefs and biases, and engaging in reflections on their own learning practices to understand their own learning styles and areas for growth

innovative, solving both familiar and unfamiliar problems, devising their own problem-solving strategies and developing their own techniques to arrive at solutions

engaged, by connecting academic content to real-world situations, enabling learners to see the relevance of their studies; and by including processes for continuous feedback, helping learners to understand their progress and stay engaged in their own learning.

School feedback: 'Cambridge students develop a deep understanding of subjects and independent thinking skills.'

Feedback from: Principal, Rockledge High School, USA

Qualifications that are recognised and valued worldwide

Cambridge qualifications prepare and equip learners with the skills they need to thrive at university and beyond. The world's best higher education institutions recognise our qualifications and value the critical thinking skills, independent research abilities and deep subject knowledge that Cambridge learners bring.

We continually work with universities and colleges in every part of the world to ensure that they understand and accept our qualifications. More than 2500 universities in over 90 countries formally recognise Cambridge qualifications, with many more accepting our qualifications on application.

UK ENIC, the national agency in the UK for the recognition and comparison of international qualifications and skills, has carried out an independent benchmarking study of Cambridge International AS & A Level and found it to be comparable to the standard of AS & A Level in the UK. This means students can be confident that their Cambridge International AS & A Level qualifications are accepted as equivalent, grade for grade, to UK AS & A Levels by leading universities worldwide.

A choice of assessment routes

Cambridge International AS & A Level offers a choice of assessment routes with staged assessment available in many subjects: Cambridge International AS Level can be offered as a standalone qualification or as part of a progression to Cambridge International A Level.

Cambridge International AS Level Thinking Skills makes up the first half of the Cambridge International A Level course in Thinking Skills and provides a foundation for the study of Thinking Skills at Cambridge International A Level. The AS Level can also be delivered as a standalone qualification. Depending on local university entrance requirements, students may be able to use it to progress directly to university courses in Thinking Skills or some other subjects. It is also suitable as part of a course of general education.

Cambridge International A Level Thinking Skills provides a foundation for the study of Thinking Skills or related courses in higher education. Equally, it is suitable as part of a course of general education.

For more information about the relationship between the Cambridge International AS Level and Cambridge International A Level see the 'Assessment overview' section of the Syllabus overview.

Visit **www.cambridgeinternational.org/recognition-search** and university websites for the most up-to-date higher education entry requirements.

Learn more: **www.cambridgeinternational.org/recognition**

Supporting teachers

We believe education works best when teaching and learning are closely aligned to the curriculum, resources and assessment. Our high-quality teaching support helps to maximise teaching time and enables teachers to engage learners of all backgrounds and abilities.

We aim to provide the following support for each Cambridge qualification:

- Syllabus
- Specimen question papers and mark schemes
- Specimen paper answers
- Schemes of Work
- Example candidate responses
- Past papers and mark schemes
- Principal examiner reports for teachers

These resources are available on the School Support Hub at **www.cambridgeinternational.org/support**, our secure online site for Cambridge teachers. Your exams officer can provide you with a login.

Additional teaching & learning resources are also available for many syllabuses and vary according to the nature of the subject and the structure of the assessment of each syllabus. These can include ready-built lesson materials, digital resources and multimedia for the classroom and homework, guidance on assessment and much more. Beyond the resources available on the Schools Support Hub, a wide range of endorsed textbooks and associated teaching and learning support are available from Cambridge at **www.cambridge.org/education** and from other publishers. Resources vary according to the nature of the subject and the structure of the assessment of each syllabus.

You can also contact our global Cambridge community or talk to a senior examiner on our discussion forums.

Sign up for email notifications about changes to syllabuses, including new and revised products and services, at **www.cambridgeinternational.org/syllabusupdates**

Professional development

Find the next step on your professional development journey:

- **Introduction courses** – An introduction to Cambridge programmes and qualifications. For teachers who are new to Cambridge programmes or new to a specific syllabus.
- **Focus on Teaching courses** – These are for teachers who want to explore a specific area of teaching and learning within a syllabus or programme.
- **Focus on Assessment courses** – These are for teachers who want to understand the assessment of a syllabus in greater depth.
- **Marking workshops** – These workshops help you become more familiar with what examiners are looking for, and provide an opportunity to raise questions and share your experiences of the syllabus.
- **Enrichment Professional Development** – Transform your approach to teaching with our Enrichment workshops. Each workshop focuses on a specific area of teaching and learning practice.
- **Cambridge Professional Development Qualifications (PDQs)** – Practice-based programmes that transform professional learning for practicing teachers. Available at Certificate and Diploma level.

For more information visit **www.cambridgeinternational.org/support-and-training-for-schools**

Supporting exams officers

We provide comprehensive support and guidance for all Cambridge exams officers.
Find out more at: **www.cambridgeinternational.org/eoguide**

2 Syllabus overview

Aims

The aims describe the purposes of a course based on this syllabus.

Students following a course based on this syllabus will:

- grow as independent thinkers, applying their thinking abilities to real-life scenarios
- become adept at organising and evaluating different types of information
- create their own strategies for solving unfamiliar problems, helping them to thrive in a changing world
- confidently present logical, ordered and coherent arguments to persuade others towards a clear conclusion
- become adept at making well-reasoned judgements and decisions, even when faced with new information, ideas and challenges
- develop a highly transferable set of critical thinking, reasoning and problem-solving skills which will set them up for success in higher education and employment.

We are an education organisation and politically neutral. The contents of this syllabus, examination papers and associated materials do not endorse any political view. We endeavour to treat all aspects of the exam process neutrally.

Content overview

The Thinking Skills subject content is divided into two parts: problem solving and critical thinking. The subject content is the same for AS Level and for A Level. The difference between AS Level and A Level is determined by the demand and complexity of the tasks.

Problem solving

The problem solving content is presented in four areas:

- understanding information
- using information
- analysing information
- communicating reasoning.

Problem solving is about making use of the information available to deduce further information, draw conclusions and make choices and decisions. Problems will often involve numerical information, but problem solving is **not** a test of mathematics. Only basic numeracy is expected, although these numeracy skills are a vital part of the toolkit for solving many problems. Confidence in working with numerical information and performing mental arithmetic is therefore important for developing efficient problem-solving skills, but the focus of the syllabus is to develop the problem-solving skills themselves.

Students are expected to have basic numeracy skills, including understanding of percentages, ratio and proportion. They should also understand and be able to calculate an average (mean), and be able to represent the chances of something happening in precise numerical terms (i.e. as a fraction, decimal or percentage). Simple algebraic skills can be a powerful tool for problem solving, particularly for more complex problems. These skills include the ability to represent and manipulate information, and relationships between pieces of information, concisely and efficiently. However, these algebraic skills will never be assessed directly; the focus of the syllabus is on developing the student's ability to make valid problem-solving insights and deductions, whether they make use of these tools or not.

Critical thinking

The critical thinking content is presented in two areas:

- evidence
- reasoning.

Critical thinking is about judging the value or usefulness of evidence, drawing and assessing inferences, and understanding how sound arguments are constructed. Students will encounter a broad variety of topics, often reflecting real-world situations or subjects of debate. Although a student's own thinking about a topic sometimes makes a valuable contribution to their critical thinking – for example, when constructing an argument – knowledge of the topics themselves will never be assessed directly.

As in the real world, some topics may be controversial or sensitive, and students may have pre-existing opinions about them. However, the focus of the syllabus is on the student's ability to demonstrate the critical thinking skills, and **not** on whether one point of view is morally superior to another. Students should develop the skills to accurately judge evidence and argument by the relevant criteria, draw logical conclusions and suggest plausible explanations, and construct persuasive arguments with clear structure that make valid use of the evidence available.

School feedback: 'Cambridge International AS & A Levels prepare students well for university because they've learnt to go into a subject in considerable depth. There's that ability to really understand the depth and richness and the detail of a subject. It's a wonderful preparation for what they are going to face at university.'

Feedback from: US Higher Education Advisory Council

Assessment overview

Paper 1

Problem Solving 1 hour 30 minutes
50 marks

Compulsory questions based on a variety of scenarios.

Assesses problem solving subject content.

Externally assessed

50% of the AS Level

25% of the A Level

Paper 3

Problem Analysis and Solution 2 hours
50 marks

Five compulsory questions, each based on a scenario.

Assesses problem solving subject content.

Externally assessed

25% of the A Level

Paper 2

Critical Thinking 1 hour 45 minutes
50 marks

Five compulsory questions based on multiple sources of evidence.

Assesses critical thinking subject content.

Externally assessed

50% of the AS Level

25% of the A Level

Paper 4

Applied Reasoning 1 hour 45 minutes
50 marks

Four compulsory questions based on multiple documents.

Assesses critical thinking subject content.

Externally assessed

25% of the A Level

Information on availability is in the **Before you start** section.

There are three routes for Cambridge International AS & A Level Thinking Skills:

	Route	Paper 1	Paper 2	Paper 3	Paper 4
1	**AS Level only** (Candidates take all AS components in the same exam series)	yes	yes	no	no
2	**A Level** (staged over two years) Year 1 AS Level*	yes	yes	no	no
	Year 2 Complete the A Level	no	no	yes	yes
3	**A Level** (Candidates take all components in the same exam series)	yes	yes	yes	yes

* Candidates carry forward their AS Level marks subject to the rules and time limits described in the *Cambridge Handbook*. See **Making entries** for more information about carrying forward marks.

Candidates following an AS Level route are eligible for grades a–e. Candidates following an A Level route are eligible for grades A*–E.

Assessment objectives

The assessment objectives (AOs) are:

AO1 Use and evaluate information

AO2 Create and communicate reasoning

Weighting for assessment objectives

The approximate weightings allocated to each of the assessment objectives (AOs) are summarised below.

Assessment objectives as a percentage of the qualification

Assessment objective	**Weighting in AS Level %**	**Weighting in A Level %**
AO1 Use and evaluate information	50	40
AO2 Create and communicate reasoning	50	60
Total	100	100

Assessment objectives as a percentage of each component

Assessment objective	**Weighting in components %**			
	Paper 1	**Paper 2**	**Paper 3**	**Paper 4**
AO1 Use and evaluate information	50	50	40	40
AO2 Create and communicate reasoning	50	50	60	60
Total	100	100	100	100

3 Subject content

This syllabus gives you the flexibility to design a course that will interest, challenge and engage your learners. Where appropriate, you are responsible for selecting resources and examples to support your learners' study. These should be appropriate for the learners' age, cultural background and learning context as well as complying with your school policies and local legal requirements.

Candidates for both AS and A Level should study all the problem solving and critical thinking subject content.

Problem solving

Candidates are expected to use these skills in Paper 1 Problem Solving and Paper 3 Problem Analysis and Solution.

1 Understanding information

1.1 Understand information in a variety of forms
e.g. text, tables, timetables, diagrams and graphs

1.2 Identify and select relevant information

2 Using information

2.1 Organise the calculation(s) needed to solve a problem
e.g. find the profit from making and selling some cakes

2.2 Apply a simple model
e.g. apply the scoring system of an event to determine the number of points scored by competitors

2.3 Make simple deductions
e.g. deduce the individual prices of items from the totals of two or more purchases

2.4 Search for solutions in simple situations
e.g. find the combination(s) of items that can be bought for a specified sum of money
e.g. find a passcode, given some information about the relationships between the digits

2.5 Create schedules
e.g. find the earliest time at which someone could finish watching a number of television programmes

3 Analysing information

3.1 Identify logical relationships, patterns and features in data/information
e.g. analyse a set of coded messages to infer something about the original messages

3.2 Apply a complex model
e.g. find the number of toys that a group of people will produce in a day, given the different speeds they work at

3.3 Make complex deductions
e.g. deduce the number of goals scored in a specific match from summary data about several matches

3.4 Search for solutions in more complicated situations
e.g. find a set of scores in a competition that would result in a tie

3.5 Find optimal solutions
e.g. find the cheapest way to buy tickets for a group of people where various price options are available
e.g. find the highest score that could be achieved in a game without winning the game

3.6 Adapt a method of solution in response to a change in the situation
e.g. calculate the new outputs and profit after a change in working hours

4 Communicating reasoning

4.1 Explain reasoning
e.g. explain how a player can be certain that they can win a game from their present position by considering all the possible moves on each turn

4.2 Justify the solution to a problem with logical reasoning
e.g. demonstrate that the maximum number of toys that can be produced in an hour is 5 by showing that it would take 65 minutes to produce 6 toys
e.g. demonstrate that the only two possible scores that could have been awarded by a judge to a competitor were 5 and 8

4.3 State assumptions made within reasoning
e.g. when using incomplete data to estimate a value

Critical thinking

Candidates are expected to use these skills in Paper 2 Critical Thinking and Paper 4 Applied Reasoning.

5 Evidence

5.1 Evaluating evidence

5.1.1 Assess credibility of evidence

Credibility has three elements: the reliability of the source, the plausibility of the content and consistency with other evidence.

- The reliability of a source may be strengthened or weakened by five criteria:
  - **reputation:** sources may have a good or bad reputation either as individuals or on the basis of a category to which they belong, such as their occupation or qualifications, or the type of institution or publication.
  - **ability to see** (or hear, etc.)**:** someone who is an eyewitness of events has a good ability to see what happens, provided they have good eyesight and are paying attention. Researchers, government departments, etc. have good access to data.
  - **vested interest:** this consists of a motive for personal benefit (often financial) which may influence someone's words or actions and thereby weaken their reliability. Conversely, the reliability of a source is strengthened if their evidence is contrary to their vested interest, e.g. because it incriminates them or costs them money.
  - **expertise:** this consists of relevant knowledge, qualifications, experience or skills.
  - **neutrality/bias:** bias may be based on personal prejudice or on the aim of an organisation or of a task. Neutrality is the absence of bias.

- The plausibility of content is the intrinsic likelihood of the content of a claim to be true, irrespective of the reliability of the source.

- Two pieces of evidence may:
  - corroborate one another (in which case each makes the other more likely to be true)
  - be consistent with each other (in which case they can both be true)
  - be inconsistent with each other or contradict each other (in which case they cannot both be true). Two sources may be described as 'not inconsistent' if they appear superficially to be inconsistent with one another but are actually consistent.

5.1.2 Assess the representativeness of a sample

Research is almost always based on samples.

- **number:** samples are, by definition, smaller than the population to which their conclusions are extrapolated, but some samples can be fairly criticised for being too small to be the basis for a valid conclusion.
- **characteristic:** a sample may be unrepresentative if it shares or lacks a characteristic which does not apply to other members of the population, e.g. gender, age, occupation, and if that characteristic could plausibly influence the results.
- **selectivity:** the method of selection may influence results: for example, if the sample is self-selected, it is likely to consist only of those who feel relatively strongly about the subject; if the selection is random, it may be unintentionally limited, e.g. to people who are available during the working day, or who have internet access; if participants are paid, they may be inclined to give the answers they think the researcher wants.

5.1.3 Evaluate the presentation of data

Various aspects of the mode of presentation may misrepresent the information, e.g. the range of values on the *y*-axis of a graph, irregular intervals on *x*- or *y*-axes, relative size of symbols.

5.1.4 Identify and compare perspectives presented in evidence

Different sources may present contrasting insights into a topic because they approach it from different points of view.

5.2 Explaining evidence

5.2.1 Assess explanations for evidence

An explanation may be weak if it fails to account for the whole of the evidence it purports to explain, if it relies on speculative additional information or an unstated assumption, or if other explanations are at least equally plausible.

5.2.2 Suggest explanations for evidence

Speakers and writers often explain evidence in a way which suits their purpose, ignoring possible alternative explanations or being unaware of them. Suggesting alternative explanations for evidence is therefore an important skill in critical thinking.

5.3 Using evidence

5.3.1 Assess the significance of evidence

The significance of evidence includes understanding the evidence and explaining how it might influence opinions or actions in relation to the issue under discussion. For evidence to be 'useful', it must be both credible and significant.

5.3.2 Assess inferences made from evidence

An inference may be weakened by being based on insufficient or unrepresentative data, by relying on an unstated assumption or if alternative inferences are equally plausible.

5.3.3 Suggest inference from evidence

5.3.4 Assess challenges to inferences made from evidence

Challenges to inferences made from evidence are relevant when one source is intended as a response to another.

5.3.5 Suggest challenge to inference from evidence

5.3.6 Develop, articulate and justify a judgment based on multiple sources

Candidates will be required to combine understanding, evaluating and comparing the implications of diverse sources, to support a judgment on a contentious issue.

6 Reasoning

6.1 Analysing reasoning

6.1.1 Recognise an argument

The specialised concept of an argument as a means of inferring a persuasive conclusion from one or more reasons is fundamental to this subject. It differentiates an argument from other forms of discourse, such as narrative, opinion or explanation. Candidates are not expected to be able to identify any of these other forms of discourse. It is often quite clear whether a piece of reasoning is an argument or an explanation, but in many other cases this can be discerned only by reference to the context.

6.1.2 Identify key elements of an argument and explain their function:

- **main conclusion:** the purpose of the argument as a whole is to support its main conclusion, which is that readers or hearers should believe something or do something. Each element in the argument supports this claim either directly or indirectly.
- **intermediate conclusion:** intermediate conclusions are supported by reasoning and in turn support the main conclusion, either directly or via one or more further intermediate conclusions.
- **reason:** reasons support either the main conclusion or an intermediate conclusion. Multiple reasons may support a conclusion either independently or jointly. Evidence*, principles, etc. are types of reason, but candidates will not be expected to identify the specific type.
- **counter-assertion:** a counter-assertion is a reason which could be used to oppose the reasoning in the passage, and which is cited in order to be rejected on the basis of reasoning.
- **counter-argument:** a counter-argument has the same function as a counter-assertion, but consists of a conclusion supported by reasoning.
- **example:** examples illustrate a claim (reason or conclusion).

***Note:** In arguments in the real world, evidence is often used to support reasons or draw inferences. However, the evidence must be genuine for it to strengthen the reasoning. In the context of an examination, neither candidates nor examiners have the means to research and verify evidence. Consequently, in questions involving argument structure, evidence elements will be treated as reasons.

6.1.3 Identify unstated assumptions in an argument

An unstated assumption is a step in reasoning which is required in order for the conclusion to be validly drawn, but is not stated explicitly. Authors sometimes make assumptions when they consider part of the support for their conclusion to be obvious, trivial or uncontroversial. Alternatively, they may not realise that there is a gap in their reasoning, or they may be trying to conceal a significant weakness in the reasoning by failing to make it explicit. Speculations about a situation or the (implied) author or reader do not constitute unstated assumptions in terms of this syllabus.

6.2 Evaluating reasoning

6.2.1 Recognise and evaluate informal fallacies

Several informal fallacies are widely recognised and the most significant of them are included in this syllabus.

- **conflation:** concealing a step in reasoning by treating two words or expressions as if they were interchangeable even though their meanings are different.
- **equivocation:** concealing a step in reasoning by tacitly shifting from one meaning of a word or expression to another.
- **circular reasoning:** this general category subsumes tautology, begging the question and 'no true Scotsman' as well as circular argument. All of these are ways of appearing to derive an inference from one or more reasons without actually doing so. Candidates are not expected to be able to differentiate between these types of circular reasoning.
- **causal fallacy:** fallacies of this type occur when someone claims that just because one event or phenomenon follows another (*post hoc**) or is accompanied by another (*cum hoc**), it must have been caused by the other.
- **generalisations:** generalisations are not necessarily flawed, but 'rash' and 'sweeping' generalisations do constitute informal fallacies. Rash generalisations are based on inadequate evidence; if this is done intentionally, it may be referred to as 'cherry-picking' or the 'Texas sharpshooter fallacy'. Sweeping generalisations fail to allow for exceptions.
- **straw man:** this type of unfair reasoning misrepresents an opponent's argument in order to respond to it more easily. This fallacy is sometimes implied by the content of the response, without being stated explicitly.
- **restriction of options (false dichotomy):** this informal fallacy has two forms:
  - ignoring the possibility of moderate opinions or actions in order to claim that anyone who rejects one extreme must accept its opposite.
  - claiming that because one opinion or claim is true, another cannot be, whereas it is possible to accept both.
- **argument from ignorance:** this informal fallacy alleges that a claim is true because it has not been proved to be false.
- **slippery slope:** opposing an apparently moderate proposal by alleging that it will inevitably lead to disastrous consequences.

continued

6.2.1 Recognise and evaluate informal fallacies continued

- **confusion of necessary and sufficient conditions:**
  - If a necessary condition for a phenomenon is fulfilled, the phenomenon may or may not occur.
  - If a necessary condition is not fulfilled, the phenomenon will not occur.
  - If a sufficient condition for a phenomenon is fulfilled, the phenomenon will occur.
  - If a sufficient condition is not fulfilled, the phenomenon may or may not occur.

  It is a mistake or trick to claim that:

  - because a necessary condition is fulfilled, the phenomenon must occur or have occurred
  - because a sufficient condition is not fulfilled, the phenomenon cannot occur or have occurred.
- **personal attack (*argumentum ad hominem**):** criticising opponents personally instead of responding to their arguments.
- **counter attack (*tu quoque**):** rejecting criticisms on the grounds that opponents or other people are guilty of the same or equally objectionable conduct.

* Candidates are **not** expected to be able to recognise or use these Latin technical terms, but may come across them in textbooks and other sources, and they will be accepted if used correctly.

6.2.2 Recognise and assess the impact of weaknesses in reasoning:

- **support:** it is a weakness if reasoning supports only part of the conclusion which is drawn from it or if a moderate claim or intermediate conclusion is used to support a conclusion which would follow only from a stronger version of the claim.
- **consistency:** it is a weakness if one part of the reasoning contradicts, or is inconsistent with, another part.
- **reliance:** the fact that a hearer or reader (e.g. a candidate) disagrees with a claim or a conclusion does **not** constitute a weakness in reasoning. However, reliance on an unsupported claim, stipulative definition or unstated assumption which is dubious does constitute a weakness, because anyone who rejects the claim, definition or assumption can reasonably also reject the conclusion.
- **counter positions:** it is not a weakness for an argument to be one-sided. Someone defending an opinion or proposal is under no obligation to show balance. However, it is a weakness if they fail to foresee and respond to an obvious objection to a claim or line of reasoning.

6.2.3 Identify and evaluate rhetorical devices:

- **appeals:** arguments frequently make appeals. Candidates are expected to be able to identify and evaluate appeals to authority, popularity, tradition, history, novelty, justice, nature, emotion (pathos) and moral principles or the personal qualities of the author/speaker (ethos). If such appeals are relevant and proportionate, they strengthen the reasoning. But appeals which are irrelevant or disproportionate constitute a weakness in reasoning.
- **analogies:** these can clarify an unfamiliar concept by comparing it with something more familiar, or seek to convince readers/hearers that, because they already accept or can reasonably be expected to accept one proposition, they ought to accept another proposition, which is unfamiliar or apparently undesirable. Analogies may be effective, moderately effective or ineffective, depending on the closeness of the resemblance between the things being compared. Effective analogies can strengthen reasoning. Some analogies are purely rhetorical (often relying on a play on words) and seek to win favour with the reader/hearer merely by entertaining them, but such analogies do not strengthen reasoning.

6.3 Constructing arguments

Note: The aim in constructing an argument is **not** to provide a balanced debate on an issue but to persuade readers/hearers to accept the argument's conclusion.

6.3.1 Articulate a conclusion

Candidates should seek to persuade readers to do something or believe something. This is not the same as explaining why they hold an opinion.

6.3.2 Provide reasons in support of a conclusion

Reasons support the main conclusion either directly or via one or more intermediate conclusions.

6.3.3 Develop strands of reasoning

Reasoning which has a complex structure is usually more effective than a collection of unrelated reasons. This complexity may include the use of intermediate conclusions and/or additional argument elements.

6.3.4 Structure reasoning using intermediate conclusions

Strands of reasoning are more effective if their support for the main conclusion is articulated in clearly identified intermediate conclusions (using argument indicator words such as 'because', 'so' or 'therefore').

6.3.5 Strengthen reasoning by the use of appropriate elements, including:

- **counter-assertion/argument with response:** these strengthen an argument, provided that the response is persuasive; otherwise, they reduce the effectiveness of the argument instead of increasing it.
- **example:** reasoning can be made clearer and more accessible by the use of simple or extended examples.
- **analogy:** analogies may be used to clarify or support an argument.
- **hypothetical reasoning:** this supports or opposes a proposal by suggesting what the consequences of a possible or counter-factual situation or course of action would be. It typically includes the word 'if', but the presence of that word is neither a necessary nor a sufficient condition for the occurrence of hypothetical reasoning.

Faculty feedback: 'Understanding how and why our climate is changing and providing the knowledge and skills to explore the challenges plays a key role in every student's education.'

Feedback from: Dr Amy Munro-Faure, Head of Education and Student Engagement of Cambridge Zero

4 Details of the assessment

Calculators

Calculators are allowed in all the papers. They are strongly recommended for Paper 1 and essential for Paper 3.

Language

Much of Thinking Skills involves considering logical relationships and implications. In problem solving, candidates need to accurately identify the constraints and requirements of the logical 'space' the problem is set in. In critical thinking, candidates need to judge whether a claim does or does not follow from the evidence, and whether a chain of reasoning does or does not support a conclusion.

An important focus of the syllabus is to prepare candidates to apply their thinking skills to many different aspects of study, work and life. Therefore the stimulus material will often reflect what they will encounter in the real world, where the language used is not always simple. The language used will aim not to be more complicated than is necessary in key parts of the information.

Because of these key features of the subject, candidates will need to be confident in their understanding of English in order to apply their thinking skills to scenarios in an English-language medium.

Stimulus material

The papers will contain stimulus material from a variety of sources, representing a variety of perspectives. Any opinions expressed within such material are not necessarily those of Cambridge International Education.

Paper 1 – Problem Solving

Written paper, 1 hour 30 minutes, 50 marks

In Paper 1, the information presented in each scenario is usually quite limited. The problem solving skills are tested more often in isolation than in Paper 3. The problems are shorter, less complex and less difficult.

There are a variety of problem solving scenarios testing various skills. Some are simple scenarios with just one question. Others may involve two or more part-questions, exploring different aspects of a scenario or breaking a more complex problem down into smaller steps. The problems generally increase in difficulty through the paper.

Credit will often be awarded for correct steps towards a solution, even if the final answer is not correct. Credit might not be awarded if working or an explanation needed to support an answer is not shown (for example, where the answer is either 'Yes' or 'No'). Candidates should ensure that they lay their working out clearly, labelling their values and calculations with units and words (for example, Income from toys sold on Tuesday: 5 cars + 7 trains = 5 × $8 + 7 × $10 = $110), so that the elements of their working can be easily identified. This will help them both to organise information and solve the problems more efficiently and successfully, and to gain the full credit they deserve for their problem solving attainment.

In questions that require candidates to explain, justify or demonstrate something, the focus is on the skill of communicating reasoning.

Paper 2 – Critical Thinking

Written paper, 1 hour 45 minutes, 50 marks

In Paper 2, the critical thinking skills are tested more often in isolation than in Paper 4. The tasks are shorter and more targeted at particular skills or pieces of evidence. It is generally easier to apply the skills to the stimulus material.

Section A focuses mostly on evaluating and using evidence. There are several sources of evidence based around a common topic. The information is usually mostly in textual form, but there may also be other forms such as graphs, diagrams, tables, pictures or numerical information. Question 1 has a number of short part-questions exploring various aspects of the evidence presented in the sources. Question 2 requires candidates to assess the extent to which they agree with a given claim about the topic and justify their judgement by using and evaluating evidence from the sources.

Section B focuses mostly on reasoning and argument. There is a passage of around 350 words, presenting an argument. Question 3 focuses on analysing the structure of the reasoning in the argument, while Question 4 focuses on evaluating the reasoning. Each has a number of short part-questions. Question 5 requires candidates to write a short argument, unconnected to the passage, in which the focus is on structuring their reasoning.

Paper 3 – Problem Analysis and Solution

Written paper, 2 hours, 50 marks

In Paper 3, the information presented in each scenario is often more detailed. The problem solving skills are tested more often in combination than in Paper 1. The problems are longer, more complex and more difficult. While the scenarios in Paper 1 also resemble the real world, in Paper 3 there is more focus on modelling situations that might be found in the real world.

There is one shorter question followed by four longer questions presenting more extensive problems to be solved. Skills often need to be combined to find solutions. Longer questions will usually test a wider variety of skills. Often, the problems develop towards a more refined solution, such that the insights gained in the earlier parts are built upon and combined to provide solutions to the later parts. The problems generally increase in difficulty through the paper.

Credit will often be awarded for correct steps towards a solution, even if the final answer is not correct. Credit might not be awarded if working or an explanation needed to support an answer is not shown (for example, where the answer is either ‘Yes’ or ‘No’). Candidates should ensure that they lay their working out clearly, labelling their values and calculations with units and words (for example, Income from toys sold on Tuesday: 5 cars + 7 trains = 5 × $8 + 7 × $10 = $110), so that the elements of their working can be easily identified. This will help them both to organise information and so solve the problems more efficiently and successfully, and to gain the full credit they deserve for their problem solving attainment.

In questions that require candidates to explain, justify or demonstrate something, the focus is on the skill of communicating reasoning.

Paper 4 – Applied Reasoning

Written paper, 1 hour 45 minutes, 50 marks

In Paper 4, the critical thinking skills are tested more often in combination than in Paper 2. Some tasks are longer and refer to a broader range of the stimulus material. It is generally more difficult to apply the skills to the stimulus material.

The paper presents a number of documents, usually five, containing information and arguments around a common topic. The documents are usually mostly in textual form, but there may also be other forms such as graphs, diagrams, tables, pictures or numerical information.

Questions 1 and 2 are usually focused on the same document of about 400 words. Question 1 tests candidates' ability to analyse the structure of the reasoning, while Question 2 focuses on evaluating the reasoning. Question 3 requires candidates to evaluate inferential reasoning from evidence (often statistical in nature) in the documents. In Question 4, candidates are required to construct a substantial reasoned argument. The question targets their ability to combine their critical thinking skills to present a persuasive case to support or challenge a given claim. They must demonstrate the ability to structure their arguments clearly and effectively, evaluate and make critical use of evidence from the documents to support their argument, and respond to any significant counter-positions.

Command words

Command words and their meanings help candidates know what is expected from them in the exams. The table below includes command words used in the assessment for this syllabus. The use of the command word will relate to the subject context.

Command word	What it means
Analyse	examine in detail to show meaning, identify elements and the relationship between them
Assess	make an informed judgement
Calculate	work out from given facts, figures or information
Evaluate	judge or calculate the quality, importance, amount, or value of something
Explain	set out purposes or reasons / make the relationships between things clear / say why and/or how and support with relevant evidence
Identify	name/select/recognise
Justify	support a case with evidence/argument
Predict	suggest what may happen based on available information
State	express in clear terms
Suggest	apply knowledge and understanding to situations where there are a range of valid responses in order to make proposals / put forward considerations

5 What else you need to know

This section is an overview of other information you need to know about this syllabus. It will help to share the administrative information with your exams officer so they know when you will need their support. Find more information about our administrative processes at **www.cambridgeinternational.org/eoguide**

Before you start

Previous study

We recommend that learners starting this course should have completed a course in English equivalent to Cambridge IGCSE™ or Cambridge O Level First Language English. Thinking Skills also requires some facility with mathematics, and we recommend that learners should have previously completed a course in mathematics equivalent to Cambridge IGCSE or Cambridge O Level.

We do not expect learners starting this course to have previously studied Thinking Skills.

Guided learning hours

We design Cambridge International AS & A Level syllabuses to require about 180 guided learning hours for each Cambridge International AS Level and about 360 guided learning hours for a Cambridge International A Level. The number of hours a learner needs to achieve the qualification may vary according to each school and the learners' previous experience of the subject.

Availability and timetables

All Cambridge schools are allocated to one of six administrative zones. Each zone has a specific timetable. Find your administrative zone at **www.cambridgeinternational.org/adminzone**

You can view the timetable for your administrative zone at **www.cambridgeinternational.org/timetables**

You can enter candidates in the June and November exam series.

Check you are using the syllabus for the year the candidate is taking the exam.

Private candidates can enter for this syllabus. For more information, please refer to the *Cambridge Guide to Making Entries*.

Combining with other syllabuses

Candidates can take this syllabus alongside other Cambridge International syllabuses in a single exam series. The only exceptions are:

- syllabuses with the same title at the same level.

Group awards: Cambridge AICE Diploma

Cambridge AICE Diploma (Advanced International Certificate of Education) is a group award for Cambridge International AS & A Level. It encourages schools to offer a broad and balanced curriculum by recognising the achievements of learners who pass exams in a range of different subjects.

Learn more about Cambridge AICE Diploma at **www.cambridgeinternational.org/aice**

Making entries

Exams officers are responsible for submitting entries. We encourage them to work closely with you to make sure they enter the right number of candidates for the right combination of syllabus components. Entry option codes and instructions for submitting entries are in the *Cambridge Guide to Making Entries*. Your exams officer has access to this guide.

Exam administration

To keep our exams secure, we produce question papers for different areas of the world, known as administrative zones. We allocate all Cambridge schools to an administrative zone determined by their location. Each zone has a specific timetable.

Some of our syllabuses offer candidates different assessment options. An entry option code is used to identify the components the candidate will take relevant to the administrative zone and the available assessment options.

Support for exams officers

We know how important exams officers are to the successful running of exams. We provide them with the support they need to make entries on time. Your exams officer will find this support, and guidance for all other phases of the Cambridge Exams Cycle, at **www.cambridgeinternational.org/eoguide**

Retakes and carrying forward marks

Candidates can retake Cambridge International AS Level and Cambridge International A Level as many times as they want to.

Learn more about retake entries, including definitions and information on entry deadlines, at **www.cambridgeinternational.org/retakes**

Candidates can carry forward their Cambridge International AS Level marks from one series to complete their Cambridge International A Level in a following series. The rules, time limits and regulations for carry-forward entries can be found in the *Cambridge Handbook* for the relevant year of assessment and the *Carry-forward regulations supplement* at **www.cambridgeinternational.org/eoguide**

To confirm what entry options are available for this syllabus, refer to the *Cambridge Guide to Making Entries* for the relevant series.

Language

This syllabus and the related assessment materials are available in English only.

Accessibility and equality

Syllabus and assessment design

At Cambridge we recognise that our candidates have highly diverse socio-economic, cultural and linguistic backgrounds, and may also have a variety of protected characteristics. Protected characteristics include special educational needs and disability (SEND), religion and belief, and characteristics related to gender and identity.

We follow accessible design principles to make our syllabuses and assessment materials as accessible and inclusive as possible. We review language accessibility, visual resources, question layout and the contexts used in questions. Using this approach means that we give all candidates the fairest possible opportunity to demonstrate their knowledge, skills and understanding.

Access arrangements

Our design principles aim to make sure our assessment materials are accessible for all candidates. To further minimise barriers faced by candidates with SEND, illness or injury, we offer a range of access arrangements and modified papers. This is the principal way in which we comply with our duty to make 'reasonable adjustments', as guided by the UK Equality Act 2010.

Important:

Requested access arrangements should be based on evidence of the candidate's barrier to taking an assessment and should also reflect their normal way of working. For Cambridge to approve an access arrangement, we need to agree that it constitutes a reasonable adjustment and does not affect the security or integrity of the assessment. This is explained in section 1.3 of the *Cambridge Handbook* **www.cambridgeinternational.org/eoguide**

Applying for access arrangements

- Details of our standard access arrangements and modified question papers are available in section 1.3 of the *Cambridge Handbook* **www.cambridgeinternational.org/eoguide**
- Centres are expected to check the availability of access arrangements and modified question papers at the start of the course. Check the *Cambridge Handbook*, the assessment objectives listed in the syllabus document and, where applicable, any access arrangement restrictions listed in the syllabus document.
- Contact us at the start of the course to find out if we can approve an access arrangement that is not listed in the *Cambridge Handbook*.
- All applications should be made by the deadlines published in the *Cambridge Handbook*.

After the exam

Grading and reporting

Grades a, b, c, d or e indicate the standard a candidate achieved at Cambridge International AS Level. 'a' is the highest and 'e' is the lowest grade.

Grades A*, A, B, C, D or E indicate the standard a candidate achieved at Cambridge International A Level. A* is the highest and E is the lowest grade.

'Ungraded' means that the candidate's performance did not meet the standard required for the lowest grade (E or e). 'Ungraded' is reported on the statement of results but not on the certificate. In specific circumstances your candidates may see one of the following letters on their statement of results:

- Q (PENDING)
- X (NO RESULT).

These letters do not appear on the certificate.

If a candidate takes a Cambridge International A Level and fails to achieve grade E or higher, a Cambridge International AS Level grade will be awarded if both of the following apply:

- the components taken for the Cambridge International A Level by the candidate in that series included all the components making up a Cambridge International AS Level
- the candidate's performance on the AS Level components was sufficient to merit the award of a Cambridge International AS Level grade.

On the statement of results, Cambridge International AS & A Levels are shown as General Certificates of Education Advanced Subsidiary Level and Advanced Level, GCE Advanced Subsidiary Level (GCE AS Level) and GCE Advanced Level (GCE A Level).

On the certificates, Cambridge International AS & A Levels are shown as General Certificate of Education.

School feedback: 'Cambridge International A Levels are the 'gold standard' qualification. They are based on rigorous, academic syllabuses that are accessible to students from a wide range of abilities yet have the capacity to stretch our most able.'

Feedback from: Director of Studies, Auckland Grammar School, New Zealand

How students, teachers and higher education can use the grades

Cambridge International A Level

Assessment at Cambridge International A Level has two purposes:

1 to measure learning and achievement

The assessment confirms achievement and performance in relation to the knowledge, understanding and skills specified in the syllabus.

2 to show likely future success

The outcomes help predict which students are well prepared for a particular course or career and/or which students are more likely to be successful.

The outcomes help students choose the most suitable course or career

Cambridge International AS Level

Assessment at Cambridge International AS Level has two purposes:

1 to measure learning and achievement

The assessment confirms achievement and performance in relation to the knowledge, understanding and skills specified in the syllabus.

2 to show likely future success

The outcomes help predict which students are well prepared for a particular course or career and/or which students are more likely to be successful.

The outcomes help students choose the most suitable course or career

The outcomes help decide whether students part way through a Cambridge International A Level course are making enough progress to continue

The outcomes guide teaching and learning in the next stages of the Cambridge International A Level course.

Changes to this syllabus for 2028, 2029 and 2030

The syllabus has been updated. This is version 2, published November 2025.

You must read the whole syllabus before planning your teaching programme.

Changes to version 2 of the syllabus, published November 2025

Changes to syllabus content	• Subject content for 3.3 has been updated to 'Make complex deductions.'
Changes to assessment (including changes to specimen papers)	• The wording on the mark scheme for Paper 02 Questions 1(c) and 3(a) have been adjusted for clarity. • A correction has been made to the mark scheme for Paper 03 Question 3(g).
Changes to availability	• The note on the front cover regarding availability restrictions has been removed.

Changes to version 1 of the syllabus, published September 2025

Changes to syllabus content	• The syllabus aims have been updated. • The learner attributes have been updated. Subject content • The subject content has been revised and updated. • The wording and order of the sub-topics and learning objectives have been updated for clarity and to improve the teaching order. • Examples have been given for most learning objectives in the problem solving subject content, to aid in understanding. • The guidance for the critical thinking learning objectives has been developed to support understanding. • Terminology has been updated. • The list of command words has been updated.
Changes to assessment (including changes to specimen papers)	Assessment objectives • The assessment objectives have been reduced from three to two. • The assessment objectives have been rewritten. • The weightings of the assessment objectives as a percentage of the qualification have changed. The weightings as a percentage of each component have also changed.

continued

Changes to assessment (including changes to specimen papers) continued	Paper 3 • This paper has been restructured to give a more accessible entry point, now beginning with a 5-mark question followed by four questions of ascending difficulty, three of which will be worth 10 marks and one of which will be worth 15 marks. The 15-mark question may not always be the most difficult and therefore will not always be the final question. Paper 4 • Question 4 is now marked out of 24 marks instead of 27. The mark scheme has been amended to reflect this change. The additional 3 marks will now form an additional part question earlier on in the paper. The overall mark for Paper 4 is still 50.
Carry forward arrangements	• Marks achieved in Cambridge AS & A Level Thinking Skills in 2027 can be carried forward to future series of Cambridge AS & A Level Thinking Skills in 2028, subject to the regulations set out in the Cambridge Handbook for the relevant year of assessment and the Carry-forward regulations supplement at **www.cambridgeinternational.org/eoguide**

In addition to reading the syllabus, you should refer to the updated specimen assessment materials. The specimen papers will help your students become familiar with exam requirements and command words in questions. The specimen mark schemes show how students should answer questions to meet the assessment objectives.

Any textbooks endorsed to support the syllabus for examination from 2028 are suitable for use with this syllabus.

Syllabuses and specimen materials represent the final authority on the content and structure of all of our assessments.

With a Customer Services team available 24 hours a day, 6 days a week, and dedicated regional teams supporting schools in 160 countries, we understand your local context and are here to guide you so you can provide your learners with everything they need to prepare for Cambridge International AS & A Level.

Quality management

We are committed to providing exceptional quality. In line with this commitment, our quality management system for the provision of international education programmes and qualifications for students aged 5 to 19 is independently certified as meeting the internationally recognised standard, ISO 9001:2015. Learn more at **www.cambridgeinternational.org/about-us/our-standards/**

School feedback: ‘While studying Cambridge IGCSE and Cambridge International A Levels, students broaden their horizons through a global perspective and develop a lasting passion for learning.’

Feedback from: Zhai Xiaoning, Deputy Principal, The High School Affiliated to Renmin University of China

We are committed to making our documents accessible in accordance with the WCAG 2.1 Standard. We are always looking to improve the accessibility of our documents. If you find any problems or you think we are not meeting accessibility requirements, contact us at **info@cambridgeinternational.org** with the subject heading: Digital accessibility. If you need this document in a different format, contact us and supply your name, email address and requirements and we will respond within 15 working days.

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